

Patent Application No.	Patent Title	Applicant	Abstract	Industry	Tech sub domain
201911004148	Intelligent Charging Device And A Method Thereof	CEC Landran	The present invention relates to a mobile charging device, comprising a base unit mounted in said device for charging a phone, atleast one LED (Light emitting diode) 4 mounted in said device to provide visual notification to a user, at least one buzzer 5 mounted in said device to provide audio notification to a user; and atleast one microcontroller 3 mounted in said device to control the notification of LED 4 and buzzer 5. The method for charging the mobile is performed by connecting the phone by a USB cable 8, transmitting a signal to buzzer 5 by microcontroller 3, alerting said user to close the lid by beeping an alarm, transmitting a signal LED 4 by microcontroller 3 and informing said user to disconnect said phone by glowing said LED.	Mobile, portable device manufacturers	Wireless Communication
201911004142	Automatic Railway Signal Detection System	CEC Landran	The present invention relates to a rail signal detection system, comprising; at least one sensor installed in the system to sense the traffic signal; a first microcontroller coupled to the system, wherein the first microcontroller takes input from the sensor; a zigbee module installed in the system, wherein the zigbee module transmits the information from the first microcontroller; a second microcontroller coupled with the zigbee module, wherein the second microcontroller send the traffic signal to a display screen; and at least one alert module installed in the system to alert the loco pilot.	Railways	Wireless Sensor Networks
201911004392	System For Automatically Protecting Buildings From Aging	CEC Landran	The present invention relates to a system for repairing building structures automatically by continuously monitoring the condition of the building and it comprises of plurality of cameras 1 coupled to a building, wherein the cameras 1 capture pictures of the building; an online library module associated with the system, wherein the module saves pictures of the building; a robot associated with the system, wherein the robot paints the building 2 on receiving commands; and at least one microcontroller coupled	Automation Industry	Mechatronics

			to the system, wherein the microcontroller sends commands to the robot to paint the building.		
201911004791	Portable Power Generating Device	CEC Landran	The present invention relates to a portable power generating device, comprising a first housing 3, a second housing 2 and a third housing 8 connected with each other, wherein the first housing 3 comprises of a holder for gripping an object, wherein the object is moved by a user for performing a desired task by the object, springs 10 for forcing the object in downward direction, the second housing 2 comprising at least one cylindrical rod 14 on which at least one cylindrical magnet 13 is placed, wherein the cylindrical magnet 13 is associated with a metallic frame 15 and moves in association with the metallic frame and cylindrical rod to produce an electric charge, a third housing 8 comprising at least one amplifier to boost the strength of the electric charge and at least one capacitor 7 attached with a small battery for storing the electric charge.	Other special purpose industry	Circuit Design
201911004797	Automated Crop Monitoring System	CEC Landran	The present invention relates to an automated system for remotely monitoring the agricultural field for precision agriculture. The system comprises of detectors 3 installed at various position(s) in an agricultural field(s) for sensing soil and water parameters and generating an indicative data, a control unit 5 connected to the detectors 3 for receiving the data and processing it, and an unmanned aerial vehicle 1 including a camera 2 for capturing still images or for recording moving images of the field and a raspberry pi module 6 for collecting the data in real time from the control unit and uploading it to a server for a user 7 to access the data and remotely monitor the agricultural field.	Farm Sector	Instrumentation and Measurement
201911012807	Dust Collection System And Its Method Thereof	CEC Landran	The present invention relates to a dust collection system, comprising a movable device further comprising at least two sensors 1, 7 for detecting the concentration of dust particles, at least one vacuum pump 3 for sucking the dust particles, at least one filter 8 and a chamber 9 for filtering and collecting the dust particles, at least one electronic control unit	Other special purpose industry	Sensor Networks

			(ECU) 2 for starting the vacuum pump on reception of a signal, at least one diesel engine 4 for supplying power to the pump, at least one alternator 5 for converting the rotational energy into electrical energy, a transmitter module for transferring the information regarding concentration of dust particles and control room in association with a receiver module for controlling the device. The method for dust collection comprising the steps of sensing the concentration of dust particles, sucking the dust particles with air, filtering and collecting the dust particles.		
201911012806	Heat Shield Device For Protecting Atmospheric Re-Entry Of Space Probe And Its Method Thereof	CEC Landran	The present invention relates to a heat shield device for preventing atmospheric re-entry of space probe, comprising a deploy plate 6 for opening the device whenever required, a release plate 1 for restricting the rotation of the device, a spring 3 for providing an actuation force for opening the device, a sensor to detect the distance from the ground, plurality of servo motors 4, 5 for releasing the first 6 and second 1 plates, a microcontroller for actuating the servo motors 4, 5, a cloth material for covering the device. The method for protecting the space probe, comprises the steps of activating the first servo motor 5 for releasing the first plate 6, applying force on the arms 8 due to the extension of spring 3, expanding of the cloth material, sensing the predefined altitude from the ground, activating the second servo motor 4 for releasing the release plate 1.	Space sector	Environment Science
201911030635	Brain Wave Controlled Bionic Arm System	CEC Landran	The present invention relates to a brain wave controlled bionic arm system, comprising a mindwave headset to detects and convert a neural signal of a users brain to digital signal, a controller for receiving and processing the digital signal to generate an output, a bluetooth module for transferring the digital signal from the mindwave headset to the controller, a bionic arm for reading the output from the controller and for performing number of operations including writing, a solar panel for trapping solar energy ,number of wheels for providing	Other special purpose industry	Neuroscience, Embedded System

			movement to the bionic arm, a motor for providing motion to the wheels, an another motor for providing angular movement to the bionic arm. Ref. to Fig. 1		
201911030633	Farm Management System	CEC Landran	The present invention relates to a farm management system, comprising a sensory module comprising plurality of sensors 2 and a dual tone multi-frequency communication unit 3 for detecting and sending a signal regarding animal intrusion, an alerting module for receiving the signal and alerting the user about animal entry in the farm 1, a cabin for storing all tools and equipments that are required for farming, plurality of optical magnetic sensors attached to said cabin to detect and alert a user about entry of a person in the cabin, an image capturing module for capturing the image of crops, an image processing unit attached with the image capturing module for performing a series of operations like pre-processing, image segmentation, feature extraction and finally classification of the features to detect the type and region of disease, a pumping module 4 for irrigating a required amount of water in the farm. Ref Figure 1	Farm Sector	Sensor Network
201911030637	Electricity Generating Device	CEC Landran	The present invention relates to an electricity generating device, comprising at least one induction motor to rotate a rotor of an electric fan, another induction motor acting as an induction generator to generate electricity, wherein both the induction motor are coupled to each other by a shaft, an inverter linked with the induction generator to maintain RMF speed below rotor speed, wherein the inverter also converts the alternating current produced by the induction generator to direct current, plurality of batteries to store the generated electricity, and a cooling module attached to the batteries for cooling purpose.	Power Generation	Electrical Machines

Patent application no	Title	Applicant	Abstract	Industry	Tech sub domain
<a href="#">in201711019859a</a>	Eco-cansat glider and its atmospheric data system	CEC, Landran	The present invention describes an ecocansat glider that houses electronic sensors to observe record and extract data on environmental condition without the use of any stored energy (battery). The power requirements are met by solar energy which is obtained through photovoltaic cell present in solar panels or films.	Measuring, testing and navigation instruments; watches and clocks	Measurement
<a href="#">in201711017090a</a>	Automatic cloth stand and its mechanism	CEC, Landran	The present invention relates to automatic cloth stand that will provide reflex actions in response to the information provided by the various components of stand such as sensors, wi-fi module. This stand is developed to eliminate the human effort and save the time which is required at the time of drying of clothes.	Other special purpose machinery	Handling
<a href="#">in201711016437a</a>	Biometric ticketing system and a method for the same	CEC, Landran	The present invention relates to a portable ticket generating machine eradicating the use of paper by generating a ticket corresponding to a fingerprint and storing the ticket in machine. This ticketing method is generally used in bus and train transportation. Objective of this invention is to provide a better and secure ticketing experience without using any paper and to save the time of passengers for purchasing tickets before departure from any station.	Other general purpose machinery	Control
<a href="#">in201711017140a</a>	Earthing electrode	CEC, Landran	Disclosed is an earthing electrode. The earthing electrode comprises an inner hollow pipe, a central solid pipe arranged within said inner hollow pipe, a pointed member coupled to and extending from an end portion of said inner hollow pipe, a pair of strips coupled to said inner hollow pipe to cover a first portion of a length of said inner hollow pipe, an outer hollow pipe arranged on said inner hollow pipe to cover a second portion of the length of said inner hollow pipe, and a back fill compound placed between said inner hollow pipe and said central solid pipe, and between said inner hollow pipe and said outer hollow pipe.	General purpose machinery	Engines, pumps, turbines

<a href="#">in201711017127a</a>	Open coil spring and torsional spring assisted hinge wing release mechanism for science vehicle	CEC, Landran	Disclosed is an aerial vehicle comprising a body and a wing arrangement. Further, the wing arrangement comprises a left wing having a first wing profile and a second wing profile, wherein a first end of said first wing profile is coupled to said body via a first hinge comprising a first spring therein, and a second end of said first wing profile is coupled to a first end of said second wing profile via a second hinge comprising a second spring therein and a right wing having a first wing profile and a second wing profile, wherein a first end of said first wing profile is coupled to said body via a first hinge comprising a first spring therein, and a second end of said first wing profile is coupled to a first end of said second wing profile via a second hinge comprising a second spring therein.	Motor vehicles	Transport
<a href="#">in201711017094a</a>	Steering system for a vehicle	CEC, Landran	Disclosed is a steering system of a vehicle comprising a steering assembly including a steering rod, a steering wheel, and a rack and pinion gear arrangement, wherein said steering assembly coupled to a forward pair of wheels and arranged to receive an input from the steering wheel to rotate said forward pair of wheels, a steering control unit comprising a sensor operatively associated with at least one of said pair of wheels to determine speed of said vehicle over the ground and a controller in communication with said sensor, said controller is operable to compare determined speed of said vehicle with a predetermined threshold speed, and lock said steering wheel when said speed of vehicle exceeds said predetermined threshold speed.	Motor vehicles	Transport
<a href="#">in201711017093a</a>	Drinking special straw system for drivers wearing helmets	CEC, Landran	Disclosed is a helmet hydration arrangement. The helmet hydration arrangement comprises a hollow line having a first end and a second end, wherein said hollow line is arranged within said helmet, a tube having a first end and a second end, wherein said second end of said tube is connected to a storage tank, and a coupling member for coupling said second end of said hollow line to the first end of said tube.	General purpose machinery	Engines, pumps, turbines
<a href="#">in201711017092a</a>	Rigid five bar chain retractable unfolding wing mechanism for passively controlled science	CEC, Landran	Disclosed is an aerial vehicle comprising a body and a wing arrangement coupled to said body of said aerial vehicle. The wing arrangement comprises a left wing comprising a first link, a second link, a third link and a fourth link, a right wing comprising a first link, a second link, a third link and a forth	Motor vehicles	Transport

	vehicle		link and an elastic cord coupled to said first link, second link of said left wing and said first link, second link of said right wing.		
<a href="#">in201711017091a</a>	Semi-flexible simultaneous dual motion foldable wing mechanism for gliders	CEC, Landran	Disclosed is an aerial vehicle comprising a body and a wing arrangement coupled to said body of said aerial vehicle. The wing arrangement comprises a pair of first links and a pair of second links, a pair of rollable pins to connect said pair of first links to said body of said aerial vehicle, a pair of first elastic cords coupled to said pair of first links and said body of said aerial vehicle, and a pair of second elastic cords coupled to said pair of second links and said body of said aerial vehicle. Furthermore, said pair of first elastic cords and said pair of second elastic cords provides a folding and unfolding mechanism to said pair of first links and said pair of second links of said arrangement. Fig. 1 for abstract dated this 16th day of may 2017 sarasija in/pa/1803_____ agent for the applicant	Measuring, testing and navigation instruments; watches and clocks	Measurement
<a href="#">in201711017089a</a>	Iot based smart safety solar helmet	CEC, Landran	The present invention is related to a helmet that is capable of providing immediate help to the vehicle rider if someone met with an accident. It provides help by sending information to prewritten contacts (such as police, ambulance, family members) in the form of sms and it will also alert the people present on the road by means of the alarm so that immediate help could be provided to the rider without delay. This invention also provides a provision to alert the rider when rider crosses speed limit of that particular area which is predefined by traffic laws. An alert in form of blinking led is given in case rider is not wearing a helmet. The objective of this invention is to provide safety to the rider by using a renewable source of energy (i.e. Solar energy). So there is no need to worry about battery as solar power is used to operate the helmet. Figure: - 1	General purpose machinery	Engines, pumps, turbines
<a href="#">in201711015036a</a>	Device for removal of black carbon and toxic gases and a process for the same	CEC, Landran	The invention relates to an improved efficient device for removal of black carbon and toxic gases like sulphur dioxide, nitrogen dioxide emitted from the exhaust system of vehicles or chimneys or industries, particularly a diesel type engine in the atmosphere comprising a plurality of chambers, sucking fan	General purpose machinery	Environmental technology

			and motor pumps and a process for the same, wherein a chemical reaction takes places between water, baking soda and black carbon at a predetermined temperature, thereby converting said black carbon to solid waste material.		
<a href="#">in201711004809a</a>	Intelligent alcohol detection system and a method thereof for automotive vehicles	CEC, Landran	The present invention relates to an intelligent alcohol detection system, comprising of an alcohol sensor configured to detect breath alcohol levels of an operator of the vehicle; a microcontroller operably connected to the alcohol sensor and to an ignition system of the vehicle, wherein the microcontroller is configured to prevent vehicle ignition if a breath alcohol level detected by the breath analyzer is greater than or equal to the threshold value; an ignition interlocking system to locks the ignition system of the vehicle if the alcohol concentration detected by alcohol sensor and received from microcontroller is more than set threshold value; a gsm transmitter/receiver module to identify and locate data; and a gps locator wirelessly interfaced to the microcontroller for providing location data of the operator; and a power supply module for supplying power to the system and a method thereof.	General purpose machinery	Mechanical elements
<a href="#">in201711004808a</a>	System for managing nutrients in soil	CEC, Landran	A system for managing nutrients in soil, the system comprises: a sensing arrangement, wherein said sensing arrangement is configured to sense an amount of nutrients present in said soil; a processing arrangement communicably coupled to said sensing arrangement, wherein said processing arrangement is configured to compare said sensed amount of nutrients present in said soil with an essential amount of nutrients required for growth of a plant in said soil; a tank for storing nutrients, wherein said tank comprises a valve arrangement operatively coupled to said processing arrangement, and wherein said processing arrangement regulates opening/closing of said valve arrangement in response to said sensed amount of nutrients in said soil; a gsm module communicably coupled to said processing arrangement, wherein said gsm module is configured to transmit a message to a user device; and a power supply unit configured to supply power to said system. Figure of the abstract figure 1	General purpose machinery	Mechanical elements



<a href="#">in201711004806a</a>	System and method for capturing and storing co2 from exhaust gases	CEC, Landran	The invention relates to a system and method for separating or capturing carbon dioxide from exhaust gases stream of vehicles, system comprising; a muffler for allowing exhaust gases to enter; a catalytic converter to convert harmful gases to co2, h2o and no2; at least two cylinders to separate carbon dioxide from other gases and at least one cylinder for storing carbon dioxide under pressure; and an artificial green house to convert stored carbon dioxide to oxygen. The method comprises the steps of :allowing exhaust gases to enter muffler ; converting exhaust gases to co2, h2o and no2 respectively using a catalytic convertor ; passing the resultant mixture through at least two cylinders; separating carbon dioxide from gases (n2 and h2o) through hydrate separation method; storing carbon dioxide retrieved d in at least one cylinder; and dumping stored carbon dioxide into artificial green house for converting co2 to o2.	General purpose machinery	Engines, pumps, turbines
<a href="#">in201711004805a</a>	Smart garbage control system and a method for the same	CEC, Landran	The invention relates to smart garbage control system, comprising of at least one garbage bin ; a wifi module connected with garbage bin; a central control system associated to wifi network ; at least one ultrasonic sensor placed over bin to detect the garbage level; and a buzzer placed on the outside portion of garbage bin. The method involved in the garbage control system, comprises the steps of connecting a plurality of garbage bins through a wifi network; monitoring bins with the help of central control system; determining status of plurality of bins by measuring depth of bins by a sensor and raising a buzzer if the garbage level of said bins has crossed the predefined threshold value; and providing a graphical image of garbage level of said bins on the web page.	Computers and peripheral equipment	Computer technology
<a href="#">in201711004802a</a>	System for monitoring structural health of building	CEC, Landran	Disclosed is a system for monitoring structural health of a building. The system comprises a sensing arrangement coupled to the building, wherein the sensing arrangement is configured to collect sensor data pertaining to the building; an internet of things module communicably coupled to the sensing arrangement, the internet of things module comprising a processor; and a communication device wirelessly coupled to the internet of things module, wherein the communication device is configured to receive processed	Electric motors, generators, transformers and electricity distribution and control	Electrical machinery, apparatus, energy

			information relating to the structural health of the building.		
<a href="#">in201611034907a</a>	Air purifier based on catalytic convertor and a control method	CEC, Landran	The invention relates to a solar power based air purifier, comprising an air filter mounted on a the purifier; a catalytic convertor affixed inside for allowing chemical reactions to take place and reduce toxicity of gases to obtain purified air; a rotator compressor unit associated to catalytic convertor; and a carbon coating unit on the lower portion of the purifier. The control method for purifying air through purifier, comprises the steps of, allowing polluting air containing toxic gases as an input to pass through air inlet/filter by creating a suction mechanism; converting the air having highly toxic gases into air containing less toxic gasses through a reaction in catalytic convertor for a predefined amount of time; and passing the resultant air obtained through activated carbon filter unit to obtain purified air free of harmful pollutants.	None	None
<a href="#">in201611030410a</a>	Combox - comb with storage space	CEC, Landran	There is described a multifunctional comb includes at least one wing including a top end and a bottom end, a plurality of tooth, a handle including a first end and a second end and at least one storage space.	Other manufacturing	Other consumer goods
<a href="#">in201611026885a</a>	Regenerative braking system for bicycle	CEC, Landran	The present invention provides a regenerative braking system 20 of a bicycle 1. The regenerative braking system comprises a first double helical gear 14 mounted on a pedal axle 12 ; a second double helical gear 10 mounted on a rear wheel axle 8; a shaft 16 operatively coupling the first and second double helical gears, the shaft contains a double helical gear at each end thereof; and a flywheel 17 arranged on a frame of the bicycle, the flywheel operatively coupled to a sprocket on the rear wheel axle through a drive member 18. The rotational motion of the pedal axle is transferred to the rear wheel axle through the first and second double helical gears and the shaft, and the rotation of the rear wheel axle is further transferred to the flywheel for harvesting.	Motor vehicles	Transport

<a href="#">in201611026884a</a>	Adjustable turning radius steering mechanism	CEC, Landran	The present invention relates to an adjustable turning radius steering mechanism for a vehicle, comprising a turning radius adjuster 5 integral with a cycle fork 1, wherein the turning radius adjuster consists of multiple holes 6 corresponding to different turning radius; a steering lever 4 operatively coupled with turning radius adjuster 5 and adjusting position of the steering lever 4 with respect to the multiple holes 6 of the turning radius adjuster alters turning radius for the vehicle.	Motor vehicles	Transport
<a href="#">in201611026883a</a>	Head wearable automatic electronic device	CEC, Landran	The present invention relates to a head wearable electronic device worn by a user in the form of a hat for identifying obstacles and intimating said user, thereby preventing occurrence of accidents, comprising of a distance sensors, vibration sensors, microcontroller (central processing unit) , a gps and gsm system and at least one reset button with which the user can shut down the vibration alerts by pressing or touching the button for a predefined duration and a method of operation for the same.	Communication equipment	Audio-visual technology
<a href="#">in201611026715a</a>	Improved electronic anesthesia delivery device	CEC, Landran	There is describer an electronic anesthesia delivery device includes a target for selecting and receiving at least one digital brain wave and determining a particular state of consciousness of a patient, an external source for providing electronic commands and converting the state of consciousness from a first energy state to a second energy state, a processor, at least one frequency generator, an amplifier, at least one headphone interfaced to the processor and at least one power source.	Medical and dental instruments and supplies	Medical technology
<a href="#">in201611019875a</a>	Glider with automatic wing unfolding mechanism	CEC, Landran	Disclosed is an aerial vehicle. The aerial vehicle comprises a fuselage, a linear slide arrangement coupled to the fuselage and a foldable wing arrangement. The foldable wing arrangement is coupled to the linear slide arrangement. Moreover, the linear slide arrangement is operable to deploy the foldable wing arrangement. Further, the foldable wing arrangement comprises a plurality of wings having a similar architecture and shape. Furthermore, the architecture of at least one wing of the plurality of wings comprises a wing frame including a first link, a second link, a third link and a fourth link, wherein each of the links comprises a first end and a second end, and wherein the links form a kinematic chain. Fig. 1 for abstract	Other manufacturing	Furniture, games

<a href="#">in201611016383a</a>	Electro tiles	CEC, Landran	There is provided a system for generation of electricity using pressure applied to a surface including at least one tile and a piezoelectric transducer communicably coupled to the at least one tile. The piezoelectric transducer is operable to convert the pressure applied to the one or more tiles into electric charge, for the generation of electricity.	Computers and peripheral equipment	Optics
<a href="#">in201611010679a</a>	Navtrepazium braking system mechanism	CEC, Landran	The present invention relates to a braking system control mechanism for use in a vehicle operated by a single lever floating caliper using hand or foot pressure and can control the braking system of at least two tires and also provide braking of all the rotating parts at the same time the device comprises an outer structure; an inner structure coupled to said outer structure having a plurality of holes; a brake combiner membrane; and at least two brake wires associated to said brake combiner membrane.	Motor vehicles	Transport
<a href="#">in201611010075a</a>	Cansat containing container and glider for measuring atmospheric conditions	CEC, Landran	There is provided a cansat system for measuring atmospheric conditions, system comprising: a glider, comprising at least one sensor for measuring at least one atmospheric condition, wherein said glider is operable to follow a helical descent path; and a container, comprising a spring loaded release mechanism operable for programmed release of said glider.	Measuring, testing and navigation instruments; watches and clocks	Measurement
<a href="#">in201611010074a</a>	Unfolding mechanism for wings	CEC, Landran	The present invention provides an arrangement for a frame of a wing, said frame comprising a first link, a second link and a third link, wherein said second link is angular to said first link and said third link. The present disclosure also seeks to provide folding wings of a glider to confine them into limited space. Further the present disclosure also seeks to provide simultaneous unfolding of large wings with least possible springs and jerk.	Other transport equipment	Transport
<a href="#">in-del-2015-02068a</a>	Ru-vanguard mosquito repellent	CEC, Landran	The present invention provides a smart vaporizer for insect repellent liquid, comprising: a casing comprising an intake vent, an exit vent, a power connector, an electric unit and at least one heating element for vaporizing the insect repellent liquid; the electric unit further comprising: passive infrared (pir) sensor, a processor, a mode type indicator, an insect repellent liquid level indicator, and a display; and a cartridge, comprising: an inner cartridge volume for holding the insect repellent liquid, a neck for connecting the cartridge to the casing; and a stem capable of	Agricultural and forestry machinery	Other special machines

			dispensing the vaporized insect repellent liquid to the environment, wherein the intake vent is configured to receive the cartridge.		
<a href="#">in-del-2015-02067a</a>	Thermoelectric generator using peltier plate	CEC, Landran	The present invention provides a thermoelectricity harvesting device including; a first layer, a second layer a third layer and a fourth layer, wherein first layer is the heat conductive surface, the second layer is heat transfer mechanism; third layer is a magnetic plate; and the fourth layer is a heat sink. Further, the heat conductive surface, the peltier plate, the magnetic plate and the heat sink are configured to form a temperature gradient.	Electronic components and boards	Semiconductors
<a href="#">in-del-2015-02066a</a>	Smart switch having a time selector switch with universal serial bus ports	CEC, Landran	The present invention provides a smart switch. The smart switch comprises at least one socket for receiving a first electronic device for enabling charging of the first electronic device; at least one universal serial bus port for receiving a second electronic device; a processor for detecting charging level of the first electronic device, and automatically cutting off charging supply to the first electronic device when the charging level of the first electronic device increases a pre-determined threshold; and a time selector switch to at least one user associated with the first electronic device for selecting a plurality of charging run times.	Electric motors, generators, transformers and electricity distribution and control	Electrical machinery, apparatus, energy
<a href="#">in-del-2015-01529a</a>	Women self defence wrist band	CEC, Landran	A self-defense device for injecting an attacker with a repellent comprising a wrist gear, a reservoir (2) carrying the repellent suitably disposed over the wrist gear, at least one needle (1) operably connected to the reservoir (2), an actuator (7) operably connected to the reservoir (2); wherein actuating the actuator (7) pumps the repellent through the needle (1). Fig. 4	Weapons and ammunition	Other special machines